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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/987,758	11/15/2001	Luc Dartois	Q67075	7485

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EXAMINER	
WARE, CICELY Q	

ART UNIT	PAPER NUMBER
2611	

DATE MAILED: 10/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/987,758	DARTOIS, LUC	
	Examiner	Art Unit	
	Cicely Ware	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 August 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *9 and 14* is/are allowed.

6)☒ Claim(s) *1,2,4,6,7 and 11-13* is/are rejected.

7)☒ Claim(s) *3,5,8 and 10* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 August 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 8/8/2006 have been fully considered but they are not persuasive.

a. Applicant asserts on Pg. 8 of **REMARKS** that Hellberg does not disclose "for each carrier frequency, the input sampling frequency corresponds to the modulation rate of the input signal".

Examiner disagrees. Examiner asserts that Hellberg in fact does disclose "for each frequency, the input sampling frequency corresponds to the modulation rate of the input signal" (col. 2, lines 9-36). Hellberg discloses In-Phase and Quadrature frequency conversion on a per-channel basis. Examiner asserts that channels are carriers.

b. Applicant asserts on Pg. 9 of **REMARKS** that Hellberg does not disclose "unit modulus and opposite phase".

Examiner disagrees. Examiner asserts that Hellberg in fact does disclose a phase compensation using 2 or 4 modulus and using multiplications and swapping real and imaginary parts of the signal (col. 10, lines 55-67- col. 11, lines 1-67, col. 12, lines 1-13).

Therefore the rejection to claims 1 and 7 still stands.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 2, 4, 6, 7, 11, 12, 13 are rejected under 35 U.S.C. 102(e) as being anticipated by Hellberg (US Patent 6,324,559).

(1) With regard to claim 1, Hellberg discloses a method of optimizing the performance of a mobile radio system multicarrier transmitter using processing operations comprising discrete Fourier transform computation, carriers shaping and/or filtering in the frequency domain, inverse discrete Fourier transform computation, overlapping of processed sample blocks, and an oversampling factor relating to ration between an input sampling frequency and an output sampling frequency, wherein, for each carrier, the input sampling frequency corresponds to the modulation rate of the input signal (col. 2, lines 9-36), and the length LDFT of the DFT and the length LIDFT of the IDFT are chosen in such a manner as to enable said oversampling ration to be satisfied and to enable said filtering (col. 2, lines 66-67 – col. 3, lines 1-12, col. 3, lines 51-67, col. 5, lines 42-51)..

Hellberg does not explicitly disclose a modulation rate. However it is well known in the art the FDM and I/Q (quadrature modulation) are modulations with modulation rates.

(2) With regard to claim 2, claim 2 inherits all the limitations of claim 1. Hellberg further discloses wherein, if the ratio LIDFT/LDFT is not an integer, the denominator of the fraction LIDFT/LDFT when simplified is chosen to be as small as possible, to provide the finest possible choice of the length L of the blocks of samples with no overlap at the input of the DFT, and therefore the finest possible choice of the percentage overlap (col. 5, lines 42-51).

(3) With regard to claim 4, claim 4 inherits all the limitations of claim 1. Hellberg further discloses if the ratio LDFT/LIDFT is an integer, the lengths LDFT and LIDFT are chosen in such a manner as to provide the finest possible choice of the oversampling factor or the output sampling frequency (col. 5, lines 42-51).

(4) With regard to claim 6, Hellberg discloses a method of optimizing the performance of a mobile radio system transmitter using processing operations including discrete Fourier transform (DFT) computation, filtering in the frequency domain, and inverse discrete Fourier transform (IDFT) computation, wherein, before effecting said DFT computation, a frequency shift DF is applied in the time domain equal to the algebraic difference between the required central frequency of the corresponding filtered signal and the closest frequency sample coming from said DFT computation (col. 9, lines 5-62, col. 10, lines 55-67- col. 11, lines 1-67, col. 12, lines 1-13).

(5) With regard to claim 7, Hellberg discloses a method of optimizing the performance of a mobile radio system transmitter using processing operations including discrete Fourier transform (DFT) computation, filtering in the frequency domain, and inverse discrete Fourier transform (IDFT) computation, wherein, before effecting said DFT computation, to compensate phase jumps between samples at the output of the IDFT, a complex multiplication is effected of the input samples by a complex of unit modulus and opposite phase to the phase jump to be compensated (col. 10, lines 45-67 – col. 11, lines 1-52).

(6) With regard to claim 11, see rejection of claim 1. Hellberg further discloses a mobile radio ration system transmitter (col. 1, lines 12-22, 38-50).

(7) With regard to claim 12, see rejection of claim 6. Hellberg further discloses a mobile radio ration system transmitter (col. 1, lines 12-22, 38-50).

(8) With regard to claim 13, see rejection of claim 7. Hellberg further discloses a mobile radio ration system transmitter (col. 1, lines 12-22, 38-50).

Allowable Subject Matter

4. Claims 3, 5, 8, 10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The following is statement of reasons for the indication of allowable subject matter: The instant application discloses a method of optimizing the performance of a mobile ration system multicarrier transmitter. Prior art references show similar methods but fail to teach: **"wherein, the**

input sampling frequency being equal to 3.84 MHz, the required value of the output sampling frequency being close to 80 MHz, and the required value of the frequency resolution being close to 80 kHz, LDFT is chosen to be equal to 45 and LIDFT is chosen to be equal to 1260", as in claim 5; **"wherein said blocks are rotated in such a manner that the LDFT-L zeros are placed as close as possible to the center of the blocks, to within one sample if L is odd"**, as in claim 10.

5. Claims 9 and 14 are allowed.

6. The following is statement of reasons for the indication of allowable subject matter: The instant application discloses a method of optimizing the performance of a mobile ration system multicarrier transmitter. Prior art references show similar methods but fail to teach: **"overlapping being obtained by adding LDFT - L zeros to blocks of L incident signal samples to obtain blocks of LDFT samples to be applied to a DFT of length LDFT, and wherein the LDFT samples of said blocks are rotated in such manner that the LDFT - L zeros are placed as close as possible to the a center of the blocks and the L signal samples are placed on either side of the LDFT - L zeros"**, as in claims 9 and 14.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cicely Ware whose telephone number is 571-272-3047. The examiner can normally be reached on Monday – Friday, 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571-272-2988. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Cicely Ware

cqw
September 27, 2006

JAY K. PATEL
SUPERVISORY PATENT EXAMINER